

SCHOOL OF AGRICULTURE &
ENVIRONMENTAL SCIENCES

2002-03 ANNUAL REPORT



*“Collaboration Across Academic, Research and
Cooperative Extension Programs”*

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School of Agriculture and Environmental Sciences

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Executive Summary

During the 2001-2002 academic year, the School of Agriculture and Environmental Sciences (SAES) renewed its commitment to the tripartite land grant mission by holding two summits to determine ways for teaching, research and Extension to function more cooperatively, and to create quality interdisciplinary programs focusing on six major initiatives: human and community development; biotechnology and biodiversity; agromedicine, nutrition and food safety; small-scale agriculture; soil and water quality; and international trade and development. These six initiatives emanated from reviews of the national goals of the United States Department of Agriculture, the needs of the state, faculty expertise, interest, and the potential for reciprocating partnerships. Teams of faculty from the academic, research, and Extension programs were formed to develop these initiatives more fully, and to identify niche areas or “cross-cutting” initiatives that will move North Carolina A&T forward in the 21st Century.

The 2002-2003 academic year marks the second year of conceptually and operationally defining the SAES’s six major program initiatives while concurrently promoting a collaborative culture of partnerships among academic, research and extension programs, across disciplines, across the University and with communities, businesses and governmental agencies. Regarding the program initiatives, a team composed of teaching, research and Extension personnel have developed concept papers that explain the breadth of each initiative. Each concept paper includes a description of the initiative and at least three focus areas. Each focus area has sections on needs/current activities, strategies and outcomes. Focusing ostensibly on these program initiatives will allow SAES faculty, staff and students to make significant contributions in strategic areas where the potential for learning, discovery, useful applications and engagement is the greatest. Regarding SAES’s second thrust, “collaboration,” two summits were held during the spring semester that focused on removing the human factor barriers to collaboration. We are continuously learning to work together in new ways to improve the quality and relevance of our programs and the efficiency of management. The Center for Creative Leadership, world renowned for their ability and mission to advance the understanding, practice and development of leadership, was commissioned to conduct these daylong summits. Both summits were well attended and positively evaluated. Upon the realization that successful implementation of the program initiatives depends on the entire SAES family, a summit for the support staff was held in April and a meeting of the student body was convened in March.

In this annual report, the reader will see examples of SAES’s significant activities, events, products, accomplishments and collaborative projects that reflect our results-driven mantra presented as five priority goals. These key goals, although not mutually exclusive, are: (1) provide learning experiences to facilitate the attainment of in-depth competencies, knowledge and skills by our students which will ensure their success in the changing environment; (2)

further develop and implement innovative strategies to improve recruitment, retention and graduation rates; (3) enhance, expand, and integrate quality teaching, research, Extension and international programs; (4) strengthen the integration of effective cutting-edge information and technologies; and (5) identify and access federal, state and private funds to ensure that students, faculty and staff have competitive advantages in a global society.

Significant progress has been made in achieving these six goals. Evidence of progress and notable findings relative to these goals include, but are not limited to the following: (1) reaccreditation of the academic programs in bioenvironmental engineering, child development (B-K), family and consumer science education, agricultural education and nutrition/dietetic; (2) increased enrollment of eight percent over last year 609 and expected continued growth; (3) enhanced focus on student experiential learning and internships, including active participation in professional meetings; (4) documented impact of SAES' research and Extension programs on improving the quality of life of North Carolina citizens; (5) SAES faculty generating approximately \$4.5 million in competitive funds to complement the SAES base funding of \$8.4 million; (6) publishing (by SAES faculty) of 20 refereed articles, 35 other articles; (7) high visibility of faculty, staff, and students through more than 194 presentations at professional meetings and 110 appearances at public fairs/exhibits; (8) more than 70 percent of SAES graduates who are either employed or will attend graduate and professional schools; (9) expansion of the use of computer instruction, web-based instruction and web-enhanced instruction; and (10) the establishment of a significant number of reciprocating and equitable partnerships.

Our major goals for the coming year include the following:

- **Develop a strategic plan**
- **Create a responsive learning environment that fosters high quality programs in teaching, research and Extension**
- **Integrate teaching, research and Extension programs**
- **Increase enrollment and retention**
- **Support the six program initiatives by coalescing faculty expertise and monetary sources**

- **Enhance the capacities and capabilities of the facilities at the University Farm while concurrently re-organizing its administrative, management and operational structure**
- **Kick-off our “*e-Agriculture*” initiative**

A. Overview of the Unit

1. Strategic comments regarding unit's place/role in the University and FUTURES

North Carolina A&T State University aspires to be a premier interdisciplinary-centered university that builds on comparative advantages in **agriculture**, engineering, technology, and business; a strong civil rights legacy; and status as an 1890 land-grant institution. Since our establishment in 1891, the School of Agriculture and Environmental Sciences (SAES) has

historically embraced the tripartite mission of the land-grant system: providing accessible instructional opportunities in agriculture to North Carolina citizens; conducting basic and applied research to address the needs of North Carolinians; and delivering research-based information and presentation of practical demonstrations of existing or improved practices and technologies to enhance the quality of life of all North Carolinians. Thus, we share the campus values of learning, discovery, engagement and operational excellence. We also place high value on:

- Developing human capital as our most important role
- Diversity
- Supporting new uses, alternative agriculture and value-added agriculture
- Providing science and technology to globalize agriculture
- Preparing, finding and implementing solutions
- Managing and sustaining our natural resources
- Endorsing environmental stewardship and awareness
- Encouraging social stability and economic viability

The SAES is a student-centered school that assures close attention to each individual's academic endeavors. SAES continues to be a major component of a research university that provides our students access to scholars making significant contributions to their disciplines. SAES faculty members closely integrate their instruction with research, assuring students of exposure to emerging concepts and technologies. Undergraduate students in our honors programs have opportunities to work with professors on research projects. Global studies and internships are also available for students seeking to widen their horizons.

Do not let the name of our school (SAES) mislead you. The majority of our students come from cities (not farms or ranches) and has little or no experience in growing plants or raising animals. Our students have a plethora of interests, ranging from protecting the environment to becoming lawyers, doctors and veterinarians. SAES students are "workforce ready" and go on to successful careers in areas diverse as natural resources, landscape architecture, agricultural and biosystems engineering, biotechnology, genomics, business and economics, agriscience education, child development, fashion merchandizing, animal sciences, biomedical sciences and food and nutritional sciences.

The SAES has four academic departments and 18 fields of study. Master's degrees are also offered in each of the departments. To complement the academic program, SAES has an Agricultural Research Program, a Cooperative Extension Program, a University Teaching and Research Farm (567 acres), an Agricultural Communications Unit, and 20 research and teaching laboratories.

The programs in the SAES are diverse, but our mission remains constant: to provide opportunities for individuals from diverse backgrounds to achieve excellence, through intellectual and technological advancements, in the food, agricultural, environmental and life sciences that will cultivate and enhance their potential for global leadership, productivity and competitiveness. This mission is in harmony with, and supportive of, the stated mission, goals and purpose of the University. Moreover, this mission is appropriate to our specific, mandated

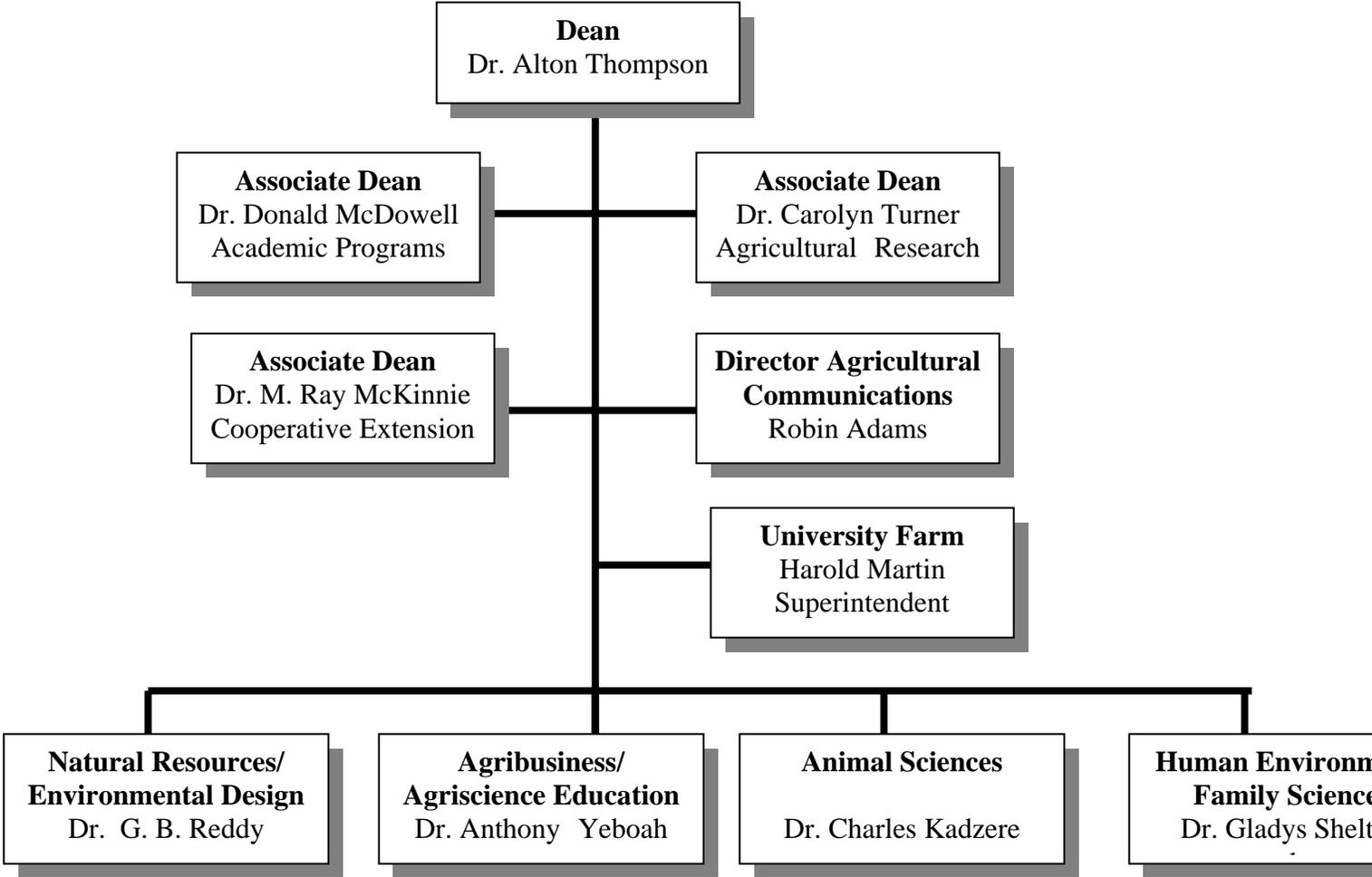
(federal legislation has impacted strongly the mission of SAES) and unique role as a school of agriculture at a land-grant university, a role with the tripartite mission of teaching, research and Extension.

In support of FUTURES, the SAES faculty identified six interdisciplinary areas that address state and national needs, involve the greatest number of faculty, and have significant potential for establishing mutually beneficial partnerships with communities, businesses, foundations, and governmental agencies. Internally called “major program initiatives,” these six areas are: (1) human and community development; (2) biotechnology and biodiversity; (3) agromedicine, nutrition and food safety; (4) small-scale agriculture; (5) soil and water quality; and (6) international trade and development. The driving forces underpinning these initiatives are science, technology and globalization. In addition to shaping the overall focus of SAES and guidance for investment of resources, these program initiatives also help align SAES with the five goals of FUTURES. Each of these six initiatives has teams of faculty members who are working to create collaborative efforts both within SAES and across campus. Pursuant to our efforts in advancing the six initiatives, SAES faculty members have initiated collaborations with faculty members in the College of Engineering, the College of Arts & Sciences, the School of Nursing, and the School of Technology. These efforts have meshed extremely well with the key tenets regarding a center-based learning environment in the FUTURES plan. Two SAES major initiatives, in particular, (Biotechnology and Biodiversity; and Agromedicine, Nutrition and Food Safety) lend themselves to broad-based campus involvement, especially in the view of the well established and organized involvement with other universities in these areas that the SAES has helped to coordinate. (Through the Southern Agbiotech Consortium for Underserved Communities (SACUC), SAES has worked closely with 11 other universities, and through the North Carolina Agromedicine Institute, SAES has worked closely with three in-state universities).

The figure below gives the schematic organizational structure for SAES.

ORGANIZATIONAL CHART

School of Agriculture and Environmental Sciences



B. Progress toward key goals

The School of Agriculture and Environmental Sciences (SAES) continues to focus its efforts on five priority goals and is committed to uncompromising excellence through our teaching, research and extension activities. These key goals, although not mutually exclusive, are:

Goal 1: Provide learning experiences to facilitate the attainment of in-depth competencies, knowledge and skills by our students to ensure their success in the changing environment

The major goal of SAES is to provide interdisciplinary, learning experiences to our students by offering high quality programs to make them competitive in the global job market and to instill good citizenship that embodies work ethic and perseverance. Six SAES programs are nationally accredited: Bioenvironmental Engineering, Agricultural Education, Child Development (Birth-Kindergarten), Nutrition-Dietetics, Family and Consumer Sciences Education, and Landscape Architecture.

Instructional technologies have been threaded through the curricula and distance learning is becoming an alternative, yet very important, mode of instruction. Hands-on learning experiences, provided by faculty who are in the forefront of research in the food, agricultural and environmental sciences, are greatly facilitated by access to multimedia classrooms and state-of-the-art laboratories.

Student experiential learning and internships are also a vital component of our training in that students are afforded the opportunity to integrate academic ideas, concepts and theories with professional training for a deeper understanding of real labor market situations. In addition, SAES students are refining their personal leadership potential and clarifying their educational and professional goals by learning from prominent persons and/or leaders in the workplace. Every interaction is likely to produce a valuable learning experience.

Beginning this fall, all students with a major in the food, agricultural and environmental sciences will be required to complete an internship or a cooperative education assignment. Students currently pursuing degrees in SAES will be strongly encouraged to take advantage of an experiential learning opportunity.

SAES has more than 10 clubs and organizations for students to become involved in during their college career. Student-run clubs and organizations give participants a chance to develop their leadership skills while re-enforcing classroom learning. American Society of Agricultural Engineers (ASAE), Minorities in Natural Resources and Related Sciences (MANNRS), and the Future Farmers of America (FFA) are just a few examples of organizations where students can exhibit their leadership skills not only on campus, but on the national level as well.

College life offers many opportunistic roads for students to pursue – and SAES in no exception. Many SAES students venture down these different roads to compete and put their knowledge to the test in state and national judging and scientific paper events. This year, 58 students attended professional meetings and conferences with faculty, and six of these students received first- or second-place honors in the regional and national competitions. The professional organizations have a strong commitment to student development and to the use of the food, agricultural and environmental sciences as tools for the eradication of societal problems. In addition to their research and analytical skills, the students also improved their communication and leadership skills.

Goal 2: Further develop and implement innovative strategies to improve recruitment, retention and graduation rates

Enrollment in the SAES for fall semester was 607 students, up significantly (67%) from the 488 for the 2001-2002 academic years. The SAES programs with the highest enrollment are child development and laboratory animal science.

Enrollment in the SAES has grown since 1993, although the rate of growth for several years was small and declined in 1999-2000. Enrollment for the current academic year is 67 percent higher than for the 1992-1993 academic year and 28 percent higher than for the 1997-1998 academic year. This increase is a direct result of increased recruitment efforts and revisions in our programs of study. The continued use of technology in recruitment, and activities such as the Speakers' Bureau, summer pre-college programs, the Industry Recruitment and Retention Advisory Council, the SAES Recruitment and Retention Committee, programs with K-12 schools, and the employment of a full-time student services coordinator (recruitment and retention) have also contributed to enrollment growth. Increases in enrollment will insure the viability of the SAES and its programs.

The enrollment in the SAES's graduate program has been fairly stable (N=102, what is this). The addition of ten \$12,000 assistantships, using state research matching funds, made the SAES more competitive in recruiting graduate students. However, the high costs of out-of-state tuition limit our ability to recruit out-of-state graduate students.

The SAES four-year graduation rate is among the highest for the University (34.4%); however, the SAES is committed to improving this rate. The Department of Human Environment and Family Sciences has the highest four-year graduation rate (40) while the Department of Animal Sciences had the lowest four-year graduation rate (25). Implementing the retention plans for the four academic units should positively influence this rate.

Goal 3: Enhance, expand, and integrate quality teaching, research, and Extension programs

To better integrate the teaching, research, and Extension programs, and to enhance collaboration among the faculties in these areas, summits were held on January 3, 2003 and May 23, 2003. These summits grew specifically out of a need identified by faculty related to the human factor barriers to collaboration. To be specific, the faculty felt very strongly that individual differences, and how we interact with others (interpersonal skills) needed to be addressed on the front end in order to successfully advance the six major interdisciplinary program initiatives. This being the case, the Center for Creative Leadership, world renowned for their ability and mission to advance the understanding, practice and development of leadership, was commissioned to conduct these daylong summits. The first summit dealt with building, directing and collaborating across diverse teams with differing interpersonal skills while concomitantly focusing on individual and team synergies needed to effectively work in an ever-changing environment. The second summit led the SAES faculty down a path of self-awareness, reflective insight, understanding values and how they influence our decisions and behaviors. Collectively, these summits provided the administrators and faculty the opportunity to explore our own thinking and behavioral preferences associated with leadership, interpersonal needs, and communication as well as the implications and opportunities for us and others in a non-threatening environment—the goal was to enhance the effectiveness and vitality of the SAES team and improve synergy throughout the School. Both summits were well attended and positively evaluated.

Upon the realization that successful implementation of the program initiatives depends on the entire SAES family, a summit for the support staff was held in April and a meeting of the student body was convened in March. The staff summit was designed to inform the support staff of the programmatic directions of the School, including but not limited to, the six major program initiatives, and to allow them to make recommendations to ensure a productive and responsive working environment. The purpose of the student body meeting was threefold: (1) discuss the programmatic directions of the School, including the major program initiatives; (2) working together with the faculty to transition the School into a more responsive learning environment; and (3) current issues and concerns.

During the 2002-2003 academic year, faculty were involved in a number of development activities to improve their teaching and advising responsibilities. Data from the individual faculty reports reveal that 41 percent of the faculty attended instructional workshops and/or short courses, particularly in technology-mediated methodologies. In addition, the data reveal that 90 percent of our faculty participated in professional conferences to date - a finding supportive of the idea that our students are exposed to the latest developments and trends in their respective fields.

Finally, one way to enhance, expand, and integrate quality teaching, research, Extension and international programs is human resource development and acquisition. To this end, **rest of sentence is missing**

Goal 4: Strengthen the integration of effective cutting-edge information and technologies

The use of computer instruction, Web-based instruction and Web-enhanced instruction continues to expand in the SAES. Among the major instruction innovations that continue to play key roles in reshaping the SAES are: (1) expanded computerized instruction; (2) biotechnology; and (3) modular instruction. Our faculty continues to guide students in the use of computer simulations, CD-ROM technology, AUTOCAD, LANDCAD, Instant Designer, Anatomy and Animal Care, SPSS, SAS, laser disks, graphics, Web-based and/or Web-enhanced instruction, and GIS software. Several USDA Capacity Building Grants have been especially helpful in moving the SAES in these directions.

In addition, the SAES used funds from the USDA Facilities Teaching Program to convert two additional classrooms in Benbow Hall and Webb Hall into “smart” classrooms, which will enhance our ability to deliver academic instruction by way of technology. During the next academic year, USDA Capacity Building Grant Program funds will also be used to convert two existing classrooms into “smart” classrooms.

Goal 5: Identify and access federal, state and private funds to ensure that students, faculty and staff have competitive advantages in a global society

The SAES receives annual appropriations from United States Department of Agriculture (USDA) for research and Extension activities (\$5.6 million). Hopefully, the General Assembly of North Carolina matched these funds at a rate of 60 percent. Since federal funds have increased very little over the years, there are limited funds for expansion of agricultural research and Cooperative Extension programs. Inflation has also reduced the real value of federal allocations. The recent appropriation of state matching funds, however, has helped in this area and has enabled us to broaden their impact on the small to medium, and limited-resource producers in the state, subsequently improving the levels of incomes and quality of life for program clientele. In addition, the SAES’s stature in the community was significantly enhanced because its educational, research, Extension and outreach programs were more enabling and empowering for those we serve.

The SAES has been very active in identifying and successfully obtaining competitive funds to conduct research and Extension activities. During the academic year, the grantsmanship of SAES teaching, research and Extension faculties resulted in slightly more than \$5.2 million in competitive funds, primarily (71%) from USDA. These data, by agency and funding category, are presented in the Appendices C3, C4 and C5.

Finally, in July 2001, SAES employed a development officer to assist in identifying and securing funds from federal, state and private agencies to ensure that students, faculty

and staff have sufficient resources to, respectively, finance their education and capitalize SAES cutting edge programs and major initiatives.

C. Most Significant Accomplishments

1. Learning

a. Innovations in pedagogy implemented including the use of information and instructional technology

Innovation in pedagogy permeates throughout the School of Agriculture and Environmental Sciences. Each program area continues to make impressive progress in the use of state-of-the-art technology in its teaching, research, extension/outreach programs. Faculty are utilizing a broad array of methods in instruction, including e-Learning techniques, lectures, field trips, demonstrations, discussion groups, seminars, case studies, individual and group projects, term projects, laboratories, assignments, quizzes, videos, CDs and PowerPoint presentations. The innovations in delivery centers on the increased use of computers and web based learning interactive activities. Currently, faculty in the SAES has developed 11 on-line classes and additional courses are under development. Thus, the faculty has incorporated the use of computers, when appropriate, for their respective classes and is utilizing the Blackboard platform. The SAES is committed to ensuring that all its graduates are computer literate. Our primary focus is on word processing, spreadsheets, data base management, presentation graphics, statistics and a number of CAD programs. One of the most significant improvements in instructional delivery is the development of a “Smart Classroom” in Carver Hall, the first of its kind on campus. This “Smart” technology includes interactive whiteboards, multimedia, cabinets, and software that facilitate meetings, teaching and training. Two additional smart classrooms will be operational by the fall 2003.

b. Accreditation/licensure reviews

Six of SAES major programs - Child Development (B-K), Family and Consumer Science Education, Nutrition and Dietetics, Agricultural Education, Landscape Architecture, Agricultural and Biosystems Engineering - are nationally accredited. Within the last 18 months, these programs were reviewed rigorously and the accrediting bodies affirmed re-accreditation. Receiving accreditation means that these programs meet high academic standards and are adequately positioned for the next five years. Although there are no accrediting bodies for programs in animal sciences, the unit requested and received a comprehensive USDA/Cooperative State Research, Education and Extension Service review during the fall semester 2002. The program received a favorable review, and action steps are underway to implement their recommendations and suggestions for improvement. Also, the agribusiness/agricultural economics program does not have an accrediting body but has likewise requested a USDA/Cooperative State Research, Education and Extension Service comprehensive review. The review has been scheduled for October 2003. Finally, it should be noted that a number of SAES faculty members

are state and national certified professionals. Thus, their credentials add prestige to the departments, SAES and the University.

c. Facilities updates

Funds from the USDA Facility Grant program were used to refurbish a number of offices and rooms utilized by the SAES. Specifically, the offices of the dean and the four departmental offices were renovated, new carpet installed and furniture purchased. A graduate study room was also developed in Webb Hall with workstations and computers for the growing graduate student population. A “smart classroom” and a Bioinformatics Laboratory are under construction in Webb Hall and will be operational during the fall semester of 2003. The third “smart classroom,” located in Benbow Hall, will be operational once a number of electrical and security issues are resolved. In addition, plans have been submitted to USDA to convert two existing rooms in Benbow Hall to a state-of-the-art sensory laboratory and a modernized food-processing laboratory. In Carver Hall, new offices have been refurbished for faculty and staff and new computers have been purchased. A new copying machine, a data projector and laboratory equipment (HPLC and Microwave Digester) were purchased for the Department of Natural Resources and Environmental Designs. At the University Farm, a new wetland microcosm was constructed, perimeter and internal fencing were purchased and installed, and five buildings were painted. The construction of the new poultry and dairy cattle facility will begin this fall. Their use will enhance our instructional, research and Extension programs, and animal care.

d. Faculty awards and promotions

During the past year, SAES’s talented and dedicated faculty has been recognized with numerous awards for excellence in teaching, research, and extension. Alton Thompson was elected vice-president of the Rural Sociological Society. Marcus Comer received a Ph.D. from the University of Missouri, Columbia. Donald McDowell was Past President, Southern Rural Sociological Association and elected 1st vice-president of the Association of Social and Behavioral Scientists, Inc. Terrence Thomas was inducted into Gamma Sigma Delta Honor Society of Agriculture. The N.C. A&T Division of Research honored John Allen, Mohammad Ahmenda, and Salam Ibrahim as “Research Faculty Innovators.” Salam Ibrahim also received the Award of Excellence in Research, from the Gamma Sigma Delta Honor Society of Agriculture. C. W. Seo received an Award of Honor for “Long Term Contribution to the 1890 Land Grant Mission of Teaching, Research and Service” during the Professional Agriculture Workers Conference held at Tuskegee University. Lizette Sanchez-Lugo was appointed to serve on the North Carolina Minority Health Advisory Council. Marihelen Glass received the Excellence in Teaching Award, Gamma Sigma Delta Honor Society of Agriculture, and was selected by the University as the Teacher of the Year for the School of Agriculture and Environmental Sciences. Godfrey Uzochukwu was selected as the “University Administrator of the Year.” Abolghasem Shahbazi was promoted to Professor and elected Chairperson of the North Carolina Sustainable Energy Association. Guochen Young was promoted to Adjunct Professor. Manuel Reyes received the Faculty of the Year award from the Bioenvironmental Engineering Program. Additional awards and

recognitions are listed in Appendix C2.

e. Students honors/scholarships/fellowships

Students in the SAES continued to show leadership and excelled in a number of areas. Our students have received many honors, led student organizations, chaired fund-raising activities, helped with recruitment and retention, conducted and presented applied research, presented research findings at professional meetings, served on department, school and University committees and community boards, and served as peer advisors. For instance, students in fashion merchandising and design received first and third place at the Greensboro Triad Textile and Apparel Club design competition. In the scientific student paper competition held in Atlanta at the Association of Research Director's Biennial Research Symposium, two graduate students in the food and nutritional sciences won first and second places. A third student from the food and nutritional sciences won second place in the undergraduate student poster competition.

In March 2003, the University held its Honor's Day Convocation and recognized all students with a 3.0 GPA or better. This year, 124 (26%) of the 483 SAES undergraduate students were recognized and honored. Moreover, of this student enrollment, almost 50 percent have received some type of award or honor (see Appendix B1). Seventy-nine students received a scholarship, a number limited by the scarcity of scholarship funds. In addition, 100 students were inducted into one of the four honor organizations/societies in the SAES (Gamma Sigma Delta, Kappa Omicron Nu, Alpha Tau Alpha, and Alpha Lambda Delta). Thirty-five SAES students received the Waste Management certificate. In April 2003, SAES held its inaugural Student Awards and Recognition Banquet to honor and recognize the accomplishments of all students. A total of 44 students were recognized during this well-attended event.

During 2002-2003 academic year, 58 students received the B.S. degree and 30 graduate students received the M.S. degree (see Appendix B4). It is noteworthy that 19 (33%) of the undergraduates graduated with honors.

Major employers of students

Appendix B2 lists the placement of 54 graduates for the academic year. Thus, even with a depressed economy, more than 60% of the graduating students have found employment in the private and public sectors or have decided to continue their studies. For the most part, SAES students have gained employment in areas that coincide with their training in the food, agricultural and environmental industries. A relatively large percentage of SAES graduates (30%) have decided to pursue graduate studies, mostly at land-grant institutions in the South. Over 50% of the graduates have accepted employment with local and federal institutions, such as, county schools, and USDA agencies.

Internships and coops

The number of students receiving internships continues to increase. Fifty-nine students participated in some type of internship or co-operative education program compared to

42 last year, a 40 percent increase (see Appendix B3). As SAES continues to develop more partnerships with the private and public sectors, and incorporate experiential learning in all curricula, the number of internships and cooperative education assignments will increase significantly. Last year, most of the student internships were with the corporate sector (i.e., Cargill, Dow Agrisciences, Dudley, Veterinary Clinics, Barber Landscaping, The Immune Research Group); however, this year more students are interning with federal agencies and educational institutions. Although students continue to work in a diversity of middle-level management positions with private agencies, the number of opportunities, due to the declining economy, is fewer. (See Appendix B3.)

f. Alumni and employer feedback

Through a survey of alumni and employers, together with feedback from industry and governmental representatives at the SAES Faculty-Industry Roundtable Breakfast meetings, industry advisory boards and frequent contact with the SAES Development Officer, LaDaniel Gatling, and a number of recommendations have been suggested to improve our program. In general, alumni and employers gave the SAES programs an “above average” ranking in the area of curricula content and career advising and gave the faculty and administrators very high rating in terms of expertise and productivity. However, employers cited the need to improve the communication and computer technology training of our students. They also recommended more courses dealing with leadership, team building, public relations and etiquette. Employers speak very highly and favorably of the performance of students either as interns and/or as full time employees. Undoubtedly, these positive perceptions have contributed to the increasing demand for students graduating from our programs. In attempting to better engage the faculty, staff and students with alumni, the SAES Alumni Society was chartered and is fully operational. Meetings in the state are on going and the membership is growing. The SAES Alumni Society co-sponsored student recruitment activities, receptions for graduating seniors, provided two academic scholarships to incoming freshman and participated in the SAES Career Expo 2003 and the Student Awards and Recognition Banquet. The SAES Alumni Society continues to meet regularly to plan, support, and carry out a number of recruitment and marketing strategies designed to enhance enrollment in the SAES.

Summary of student opinion form ratings

Appendix B6 contains the opinion data of students for courses taught by the faculty in the SAES for the past two academic years. The overall ranking of the SAES is the same as for the University faculty (4.3) - one-tenth of a percentage point higher than last year. The student ratings of SAES faculty are somewhat variable in that some faculty members have very high ratings whereas some faculty members have very low ratings. Of 47 faculty members, only three had a mean score of less than 3.5. In an effort to increase the quality of our teaching as well our overall rating, department chairpersons have discussed the results, including an item analysis, with each faculty member. Moreover, peer evaluations and feedback are also used to improve instructional performance.

2. Discovery

a. New research awards

The SAES faculty was very active and successful in the area of new research awards. Ninety proposals were submitted and 42 received funding (see Appendices C3, C4 and C5), a success rate of 58 percent compared with a 53 percent success rate last year. These funded proposals resulted in \$4,434,655 in additional funding supporting ongoing research, teaching and Extension activities. Of the total amount of competitive funds received, \$676,305 (15%) was for instructional purposes, \$1,625,343 (37%) was for research, \$1,329,405 (30%) was for Extension/public service and the remaining \$803,602 (18%) was for “other” activities (see Appendix C4). The United States Department of Agriculture was SAES’ chief grantor, providing 60 percent of the funding (see Appendix C3).

b. Scholarly productivity

The faculty was equally productive in terms of scholarship. The data in Appendix C7 show that the faculty published 20 journal articles, and 35 other articles. In addition, the faculty was engaged in 194 public service performances and 110 public exhibits. Paper presentations and public speaking at professional conferences, workshops and symposia are laudable. Given the size of the faculty and the teaching load, the overall faculty performance is commendable. It should be noted however, that the recent budget cuts, as well as the impending budget cuts, have affected scholarly productivity. The loss of three SPA position and one EPA non-teaching position continue to negatively impact SAES programs. Thus, plans have been implemented to expand the workforce, which should positively impact teaching, undergraduate and graduate student advisement, recruitment, research and university and community services and overall scholarly productivity.

c. Professional growth and development—faculty and staff

The quality of any academic program is only as good as the faculty and staff that make up the unit. The SAES faculty are nationally and internationally recognized for their teaching, research and Extension activities. In order to keep our competitive edge, professional growth and development for SAES’s most valuable resource must continue as reflected most succinctly by the data summarized in Appendices C7 and C8. SAES faculty and staff participated in 16 short courses (Blackboard, SIS Plus, Web for faculty, Just in Time Teaching, Proposal Writing, Recruitment and Retention), 122 professional meetings, and 110 workshops and conferences. In addition, 168 papers and posters were presented and 59 other professional activities were undertaken. SAES faculty and staff are encouraged and supported to professionally develop themselves continuously, and to become life long learners. This is crucial for the long-term success of the SAES, especially in view of the rapidly growing knowledge-base economy. Although not reported in the appendices, the staff has also taken a number of short courses (accounting and budgeting, planning, word processing, SIS Plus, spreadsheet, data base management, procurement, purchasing, etc.) for their continued profession growth and development.

3. Engagement

a. Outreach and access activities

Numerous outreach activities that increase community awareness and access to the SAES faculty and programs occurred during the academic year (Appendix D). Such activities included: working with elementary school children on science projects, showcasing our pet-on-wheels programs, participating as science fair judges at local schools, conducting informational seminars at area high schools, conducting tours of our research laboratories and at the University Farm, and collaborating with community colleges on articulation agreements. Additionally, high school students were exposed to scientific research during the summer months, through the Institute of Future Agricultural Leaders (IFAL), and the Research Apprenticeship Program (RAP). It would be remiss not to point out the faculty involvement in recruitment, advising, public speaking, reviews of scientific papers and manuscripts, demonstrations, and service on a variety of state and national committees. Examples of these are well documented in the departmental annual reports.

b. New collaborations/partnerships

In support of FUTURES, the SAES faculty identified six interdisciplinary and multidisciplinary areas that address state and national needs, involve the greatest number of faculty, and have significant potential for establishing reciprocating and equitable partnerships with communities, businesses, and governmental agencies. Each of these six initiatives (Human and Community Development, Biotechnology and Biodiversity; Water and Soil Quality; Agromedicine, Nutrition and Food Safety, Small Scale Agriculture; and International Trade and Development) has teams of faculty members who are working to create collaborative efforts both within SAES (teaching, research and Extension faculties) and across campus. Pursuant to our efforts in advancing the six initiatives, SAES faculty members have initiated collaborations with faculty members in the College of Engineering, the College of Arts & Sciences, the School of Nursing, and the School of Technology.

The SAES faculty collaborated in the development of various initiatives designed to have a positive impact upon the intellectual capital of the state and nation. A few of these initiative includes the On-line 2+2 Licensure Program in Agricultural Education, North Carolina A&T State University-North Carolina State University Master's Collaboration, Center for Entrepreneurship, the Peace Corps Masters International Program, USDS/Agriculture Research Service Trainee Program, TransTech Parma, Inc. pharmaceutical project, Community Voices, Mini-Society Project, and Down-to-Earth. Also, the SAES has sponsored biotechnology, agromedicine, genomics symposia, conferences, workshops and field days showcasing collaborative research activities held at the University Farm.

SAES faculty are also collaborating with a number of state universities, including Alabama A&M University, North Carolina State University, East Carolina University, Cornell University, Virginia Polytechnic and State University, Purdue University, Montana State University, Tuskegee University, and the University of Maryland at Eastern-Shore. SAES faculty are exploring ways to team-teach courses with the intention of enhancing instruction, and increasing collaboration among faculty. This will while eliminate duplication of effort and improve resource utilization.

Finally, SAES encourages and supports faculty participation at professional meetings, symposia, workshops and conferences as networking opportunities. The SAES continues to seek establishing new collaborations with sister units at state, national, and international levels.

c. Student activities—organized student activities and groups; sophomore/senior survey results

The SAES encourages student membership and participation in activities and organizations designed to embellish their experiential learning and develop their leadership skills while reinforcing classroom learning. Examples of such activities include the dog-washes, visits to the zoological garden, feeding the hungry, community assistance project, food drives, crop/aids walk, adopting a needy family, etc. Many of these activities are supported by students who are members of various SAES organizations, such as Minorities in Agriculture, Natural Resources and Related Sciences (MANNRS), Gamma Sigma Delta, Agricultural Education Club, Collegiate FFA, Pre Vet Club, Association for Childhood Education International, Dietetics Club, American Society of Agricultural Engineers, Alpha Tau Alpha, Alpha Lambda Delta, Earth and Environmental Science Club, Agricultural and Biosystems Engineering Club, and Landscape Architecture Club. Students have been also been involved in other activities, such as, Student Research Showcase of Excellence, Farmer-to-Farmer Program and Career Expo 2003 (more than 40 exhibitors participated in the Career Expo).

d. Staff activities in support of learning, discovery, and engagement

Staff actively participated in the student learning/training processes. Program and office assistants and technical staff help and direct students and aspiring students to relevant offices and assist faculty in the discharge of their day-to-day responsibilities. Laboratory technical staff is part and parcel of the student training process as they are invaluable in laboratory experiential training of undergraduate and graduate students. They assist faculty in preparing research presentations and scientific articles. The staff is encouraged to participate in all worthwhile training workshops that will enhance their productivity. Such workshops have included, On-line Purchasing, Budgeting and Financing, Salary Administration, SIS PLUS, Excel, Web for Faculty, FERPA, Center for Student Success, to name a few. Finally, upon the realization that the success of the programs and activities depends on the entire SAES family, a summit for the support staff was held in April to apprise them of the programmatic directions of the School, including but not

limited to, the six major program initiatives, and to allow them to make recommendations to ensure a productive and responsive working environment.

D. Goals for the Upcoming Academic Year

As North Carolina A&T moves towards the actualization of the FUTURES's interdisciplinary model for learning, discovery, engagement and operational excellence, the School of Agriculture and Environmental Sciences (SAES) is well positioned, in part because of our legislative mandate, to be a key player in this transformational process. The SAES goals for 2003-2004 include the following:

1. Develop a strategic plan for the food, agricultural and environmental sciences at North Carolina A&T State University in consonance with the interdisciplinary center-based learning environment envisioned in the FUTURES plan.
2. Create a responsive learning environment that fosters high quality programs in teaching, research and extension
3. Integrate teaching, research and Extension programs
4. Increase enrollment and retention for undergraduate and graduate students by five percent
5. Continue to support an interdisciplinary approach to programming for the six major program initiatives: human and community development; biotechnology and biodiversity; agromedicine, nutrition and food safety; small-scale agriculture; soil and water quality; and international trade and development.
6. Enhance the capacities and capabilities of the facilities at the University Farm while concurrently re-organizing its administrative, management, and operational structure
7. Kick-off an "*e-Agriculture*" Initiative

A. Relations to FUTURES

The goals for SAES for the year operate at the forefront and within the milieu of the FUTURES activities. Specifically, the School will continue its efforts to establish center-based learning efforts in the two areas mentioned in Goal 5 above [(1) Biotechnology and Biodiversity, and (2) Agromedicine, Nutrition, and Food Safety]. SAES has two of the FUTURES Seed Grants that will be conducted this year.

B. Key Indicators of Progress

Prior to providing the key indicators of progress for each of the seven SAES goals for the 2002-2003 academic year and in order to indicate more fully the correlation of these goals with FUTURES, the goals of FUTURES are listed below:

FUTURES Goals

I. Benchmarking/Assessment: The FUTURES Planning and Resource Council will establish and ensure an interdisciplinary University focus that mandates high quality and continued competitiveness and effectively involves global strategic partners in the marketing and delivery of programs and operations.

II. Interdisciplinary Programs and Centers: Deliver visionary and distinctive interdisciplinary academic studies, research, and service and include global collaborations and partnerships as part of the learning experience.

III. Responsive Learning Environment: Create a responsive learning environment that utilizes an efficiently integrated administrative support system to foster high quality programs, research, and collegial interactions, and effectively disseminates consistent information to University stakeholders.

IV. Responsive Student Services: Provides easily accessible high quality student services in an enhanced learning environment that recognizes and responds to diverse student needs.

V. Enhanced and Diversified Resources: Enhance and diversify the University's resource base through effective fundraising and entrepreneurial initiatives.

SAES Goals

Goal 1: Develop a Strategic Plan: Key indicator of progress will be the development of the plan. **{FUTURES Goal II}**

Goal 2: Create a Responsive Learning Environment: Key indicators of progress are the curricula changes, co-curricular activities, and learning experiences designed to facilitate the attainment of competencies, knowledge and skills. **{FUTURES Goal III}**

Goal 3: Integrate Teaching, Research and Extension Programs: Key indicators of progress are the number of SAES faculty (teaching, research and extension) that are working on joint projects that are interdisciplinary in nature. **{FUTURES Goal II}**

Goal 4: Increase Enrollment and Retention: Key indicators of progress will be to increase the new freshmen and transfer students each year by five percent and increase the retention of admitted students by three percent. **{FUTURES Goal IV}**

Goal 5: SAES Major Program Initiatives: Key indicators of progress will be the number of faculty members that commit to these initiatives, the number of meetings, development of a steering committee, the number of corporate, private, state and federal partners, the number of proposal submissions and funded proposals, and development of concept papers. **{FUTURES Goals II, III}**

Goal 6: Enhance the Capacities and Capabilities at the University Farm: Key indicators of progress will be the number of facilities that are constructed, renovations, the implementation of security and biosecurity measures, the number of research and Extension demonstration projects, the management changes, and the changes in farm operations. **{FUTURES Goal III}**

Goal 7: “e-Agriculture”: Key indicators of progress will be to increase the extent to which faculty, students and staff in SAES use the Internet, instructional, spatial, environmental, and biomedical technologies and biotechnologies to improve our performance. The academic, research and Extension programs as well as the services to our students and other stakeholders will be impacted in this initiative. SAES will become a participant and a provider in “learning communities” in the state, nation and the world. This initiative will help us to improve our performance efficiency and lower the digital divide in our communities. **{FUTURES Goals III, IV}**